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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/060,826	02/01/2002	Daniel S. Pickard	IB-1581	9952

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EXAMINER

LEE, WILSON

ART UNIT	PAPER NUMBER
2821	

DATE MAILED: 03/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/060,826

Applicant(s)

PICKARD ET AL

Examiner

Wilson Lee

Art Unit

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4-11, 15, 18-24 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 12 and 13 is/are rejected.
- 7) ☒ Claim(s) 3, 14, 16 and 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/15/05</u> . | 6) <input type="checkbox"/> Other: _____ |

Response to Arguments

Applicant's arguments with respect to claims 1-3 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections – 35 U.S.C. 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by Veltrop et al. (6,583,572).

Regarding Claim 1, Veltrop discloses a matching network (28) (See Figure 2 and Figure 4) for coupling an RF power supply (26) to an RF antenna (24) (See Col. 4, lines 39-67) in a plasma generator (See Abstract) comprising:

- a resonantly tunable circuit formed of a variable capacitor (C3) and an inductor (106) in a series resonance configuration (See Col. 11, lines 34-44);
- a ferrite core (216) transformer (e.g. current transformer) (See Figure 5 and Col. 10, lines 12-39) coupled to the resonantly tunable circuit (See Figure 4).

Regarding Claim 2, Veltrop discloses that the transformer inherently comprises a secondary winding and a primary winding since all transformers comprise at least two sides of windings in order to transform a voltage into another amount of voltage and the

secondary winding inherently couples the transformer to the tunable circuit since the transformer itself couples to the tunable circuit (See Figures 4, 5 and Col. 10, lines 12-39).

Claim Rejections – 35 U.S.C. 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 12 and 13 rejected under 35 U.S.C. 103(a) as being unpatentable over Veltrop et al. (6,583,572) in view of Drake Jr. (5,006,760).

Regarding Claim 12, as discussed above, Veltrop essentially discloses the claimed invention and further discloses a plasma ion or electron generator having the RF antenna (24) mounted therein (See Figure 1) for inductively generating a plasma but does not explicitly disclose a coaxial cable connected to the RF power supply (26). However, Drake discloses a coaxial cable in a plasma reactor for connecting the source and the generator in order to provide advantageous flexibility and length (See Col. 1, lines 18-39). It would have been obvious to one of ordinary skill in the art to provide a coaxial cable as a transmission line in order to obtain the advantages as taught by Drake.

Regarding Claim 13, Veltrop discloses that the transformer inherently comprises a secondary winding and a primary winding since all transformers comprise at least two sides of windings in order to transform a voltage into another amount of voltage and the

secondary winding inherently couples the transformer to the tunable circuit since the transformer itself couples to the tunable circuit (See Figures 4, 5 and Col. 10, lines 12-39).

Allowable subject matter

Claims 3, 14, 16 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 4-11, 15, 18-24 are allowed.

The following is an examiner's statement of reasons for allowance: The prior art neither discloses nor suggests the following limitations, in combination with the remaining elements as disclosed in the independent claims 4, 5, 15, 18, 21, 22:

- the transformer further comprises a core which is made of a plurality of ferrite cores such as required by claims 4, 5, 15, 21;
- the transformer comprises a core made of 12 ferrite cores with a 1.25 inch OD and 0.75 inch ID, made of M-type ferrite such as required by claim 8;
- the plasma ion or electron generator is a multicusp plasma generator such as required by claim 18 and 22.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Marcus (5,086,226) discloses a coaxial cable connected to the power source and the matching network. Proud et al. (4,266,166) discloses that the voltage source is typically coupled to the coaxial cable. Kuehnle (4,014,779) discloses a coaxial cable for transmitting high voltage. Beaudry (3,616,405) discloses that coaxial cable is low cost.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Wilson Lee whose telephone number is (571) 272-1824. Papers related to Technology Center 2800 applications may be submitted to Technology Center 2800 by facsimile transmission. Any transmission not to be considered an official response must be clearly marked "DRAFT". The official fax number is (571) 273-8300. Information regarding the status of an application may be obtained from the Patent Application Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

3-6-06


WILSON LEE
PRIMARY EXAMINER